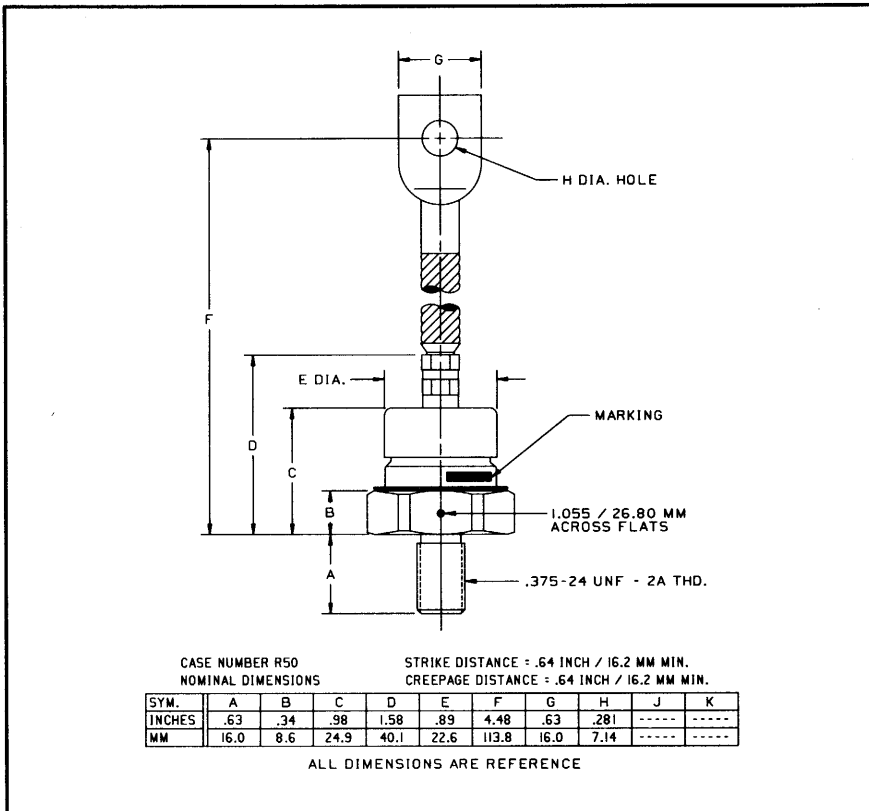


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**Silicon Rectifier**  
100 Amperes Average  
1600 Volts



**A170 (R)**  
**Silicon Rectifier**  
100 Amperes Average, 1600 Volts

**A170 (R) (Outline Drawing)**

### Ordering Information:

Select the complete five or six digit part number you desire from the table, i.e. A170PM is a 1600 Volt, 100 Ampere Silicon Rectifier.

| Type | Voltage   |      | Current<br>$I_T(av)$ |
|------|-----------|------|----------------------|
|      | $V_{RRM}$ | Code |                      |
| A170 | 200       | B    | 100                  |
|      | 400       | D    |                      |
|      | 600       | M    |                      |
|      | 800       | N    |                      |
|      | 1000      | P    |                      |
|      | 1200      | PB   |                      |
|      | 1400      | PD   |                      |
|      | 1600      | PM   |                      |

### Features:

- ☐ 1600V  $V_{RRM}$
- ☐ Hermetic Seal

### Applications:

- ☐ Transportation Equipment
- ☐ DC Motor Control
- ☐ DC Power Supplies



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**A170 (R)**  
**Silicon Rectifier**  
100 Amperes Average, 1600 Volts

### Absolute Maximum Ratings

| Characteristics                                    | Symbol       | A170 (R)     | Units              |
|----------------------------------------------------|--------------|--------------|--------------------|
| RMS Forward Current                                | $I_{F(rms)}$ | 157          | Amperes            |
| Average Forward Current                            | $I_{F(av)}$  | 100          | Amperes            |
| One Cycle Surge Current                            | $I_{FSM}$    | 2500         | Amperes            |
| $I^2t$ (for Fusing), Times $\geq 1.0$ milliseconds | $I^2t$       | 15500        | A <sup>2</sup> sec |
| Storage Temperature                                | $T_{stg}$    | -40 to +200  | °C                 |
| Operating Temperature                              | $T_j$        | -40 to +200  | °C                 |
| Mounting Torque (Lubricated)                       |              | 90 to 100    | in-lb              |
|                                                    |              | 10.1 to 11.3 | N-m                |

### Electrical and Thermal Characteristics

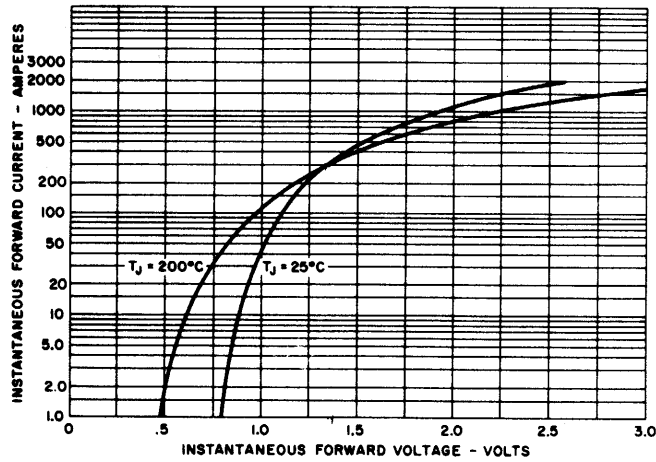
| Characteristics                                 | Symbol            | Test Conditions                                                      | A170 (R) | Units   |
|-------------------------------------------------|-------------------|----------------------------------------------------------------------|----------|---------|
| <b>Current - Conducting State Maximums</b>      |                   |                                                                      |          |         |
| Forward Voltage Drop                            | $V_{FM}$          | $T_C = 130^\circ\text{C}$ ,<br>$I_{F(av)} = 100\text{A}$ , 314A Peak | 1.3      | Volts   |
| <b>Voltage - Blocking State Maximums</b>        |                   |                                                                      |          |         |
| Repetitive Peak Reverse Voltage (Rated Limit)   | $V_{RRM}$         |                                                                      | 1600     | Volts   |
| Non-rep. Trans. Peak Rev. Voltage (Rated Limit) | $V_{RSM}$         | $V \leq 5.0\text{msec}$                                              | 1800     | Volts   |
| Reverse Leakage Current, mA peak                | $I_{RRM}$         | $T_j$ at max., $V_{RRM} = \text{Rated}$                              | 20       | mA      |
| <b>Thermal</b>                                  |                   |                                                                      |          |         |
| Maximum Resistance, Junction to Case            | $R_{\theta(j-c)}$ |                                                                      | 0.4      | °C/Watt |
| 1 $\phi$ and 3 $\phi$ (50 to 400 Hz)            |                   |                                                                      | 0.55     | °C/Watt |
| 6 $\phi$ (50 to 400 Hz)                         |                   |                                                                      | 0.72     | °C/Watt |

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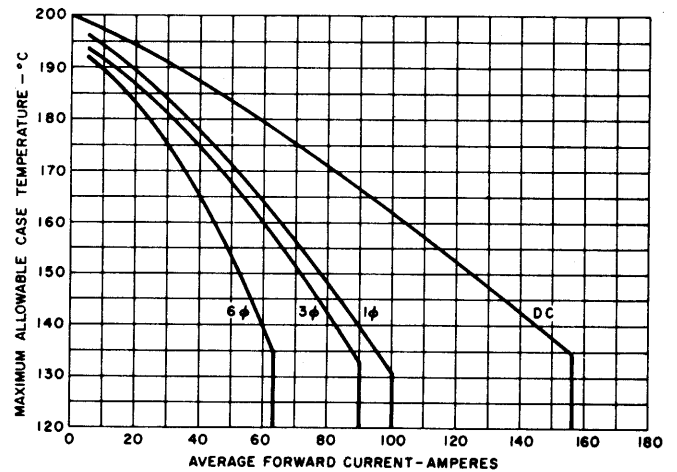
## A170 (R)

### Silicon Rectifier

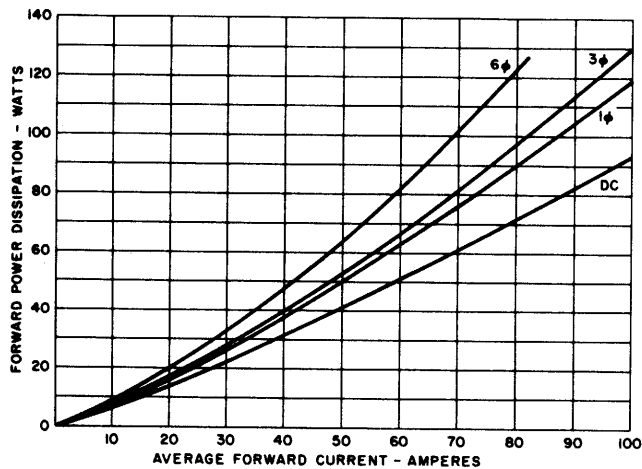
100 Amperes Average, 1600 Volts



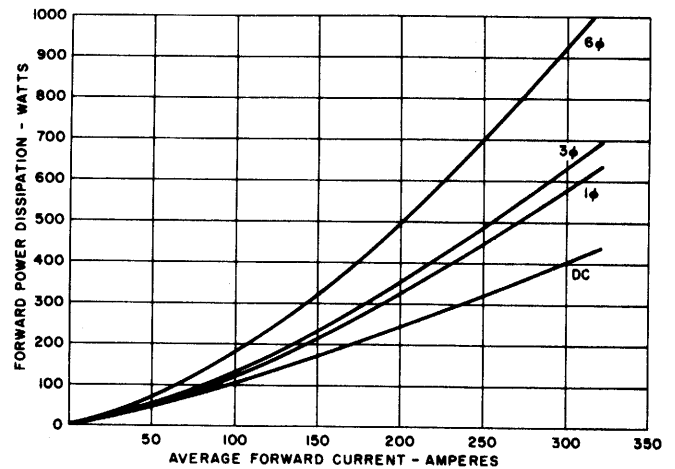
MAXIMUM FORWARD CHARACTERISTICS



MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT



AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT



AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT, HIGH LEVEL

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**A170 (R)**  
**Silicon Rectifier**  
100 Amperes Average, 1600 Volts

